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"If we are serious about the readiness of the Army, we must be serious about safety."

General John A. Wickham, Jr.
Chief of Staff, Army

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Safe Army Now

Introduction

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One of the toughest issues associated with Army readiness is overcoming the perceived dichotomy between realistic training and safety. Basically, the problem lies in our failure to integrate safety with the demand for realistic combat training. Too often we view the elements separately, with safety seen as an inhibitor to training.

If we are serious about the readiness of the Army, we must be serious about safety. Training in a cavalier unsafe way in peacetime leads to unnecessary casualties in both people and equipment in wartime. We are responsible for the lives and equipment entrusted to us, and we must learn to conserve our resources in peacetime so we can perform our mission in combat. To do this, we must instill safety in our tactical training so that we execute our combat operations as safely as possible.

This pamphlet is designed to help commanders conduct safe, tough, realistic training. The risk management technique described herein makes safety part of the process commanders use in developing tactical operations. This technique can help resolve the safety versus mission conflicts that commanders wrestle with today. Safety goes hand-in-glove with a leader's responsibilities to safeguard his soldiers and to protect and conserve the equipment entrusted to him. To do less is criminal in peacetime and in war.

JOHN A. WICKHAM, JR.
General, United States Army
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General Wickham's Five-Point Safety Philosophy

If we are serious about the readiness of the Army, we have to be serious about safety. If we do things in a cavalier, unsafe way in peacetime, we are going to accidentally kill people and break equipment in war. There is no magic that descends on the human skull when the shooting starts that makes people responsible for the equipment and lives that are entrusted to them. If we don't learn these things in peacetime, heaven help us in war.

My safety philosophy has five points. It's simple.

1. Nothing we do in peacetime warrants the unnecessary risk of life or equipment. You cannot say "We are going to do this in the name of realism" if doing it exposes your people or equipment to unnecessary risk. We must be alert for ways to improve the efficiency, effectiveness, and safety of all our operations.

2. Commanders are safety officers. This is the message I give my commanders: "You must put yourself out as the safety officer." That doesn't mean that others are not responsible and helpful in their roles, but unless the commander is involved, safety isn't going to happen.

3. Instill in soldiers a sixth sense of safety. We have to develop that kind of sixth sense about safety within the Army so that soldiers and leaders are conscious of unsafe acts that are about to happen, so that they see the potential for tragedy and avoid it.

4. Fix accountability. We have not done a very good job in terms of fixing accountability and developing a sense of responsibility to accept it. When accidents are caused by someone's clear negligence, then some concrete action must be taken; that person must be penalized.

5. Be proactive and aggressive. You must be personally involved in the activities—the training activities, the on- and off-duty activities—of your unit in your role as safety officer.

We're in a hazardous business. But we can't just accept that the cost of doing business in the Army is to kill people and break machines. ■

Commanders Guide To Increased Readiness

In World War II, one out of every five American soldiers killed died as a result of an accident. **In Korea**, more than half the Army personnel who were hospitalized were injured in accidents. **In Vietnam**, accidents claimed more than 5,700 lives, disabled more than 106,000 soldiers, and produced nearly 5 million nondisabling injuries. **Each year**, we kill the equivalent of a battalion of soldiers in accidents; we lose the equivalent of an entire mechanized infantry brigade for more than 6 weeks because of accidental injuries. The $300 million direct cost of 1 year's accidents would put 150 M1 tanks in the field or the same number of attack helicopters on the flight line. **The cost of accidents** is high and increases each year. The cost must be paid, and it is, in one form or another, out of readiness. Once lost through accidents, combat power is forever lost for the battle. Accidents are a drain on combat readiness the Army simply cannot afford.

Operational commanders are in the best position to make safety an integral part of tactical operations. The best way to do this is to **integrate safety into the process you use to develop a tactical operation**. This integration must begin the moment the mission is conceived and continue until the last lesson learned is written and acted upon. Before safety can be integrated into the operational process, the process itself must be clearly defined.

Figure 1 depicts a basic operational process. The left column outlines major mission phases, and the middle column depicts typical operational activities associated with each mission phase. The right column lists a variety of safety-related activities that can be used in various combinations to improve safety. Although these activities are shown separately, it must be emphasized that they take place as part of the operational activities shown in the middle column.

Mission Phase	Operational Activity	Safety Activity
Commander's Mission	• Initial estimate • Evaluate mission options • Develop operational alternatives • Decision-making	• Mission analysis • Hazard assessment • Risk assessment • Risk matrices • Risk reduction options
Preparation of Operation Plans and Orders	• Mission briefing • Company level plans/orders	• Safety input to briefings, orders, and SOPs • Special safety briefings and training
Preparation for Operations	• Prepare equipment • Prepare troops • Make necessary changes	• Safety checks • Special training • Higher-level support
Conduct Operations	• Lead tactical and logistical operations • Change plans as required	• Enforce compliance with safety guidance • Review changes for risk implications
After Action	• Assess performance strengths and weaknesses	• Assess risk management effectiveness

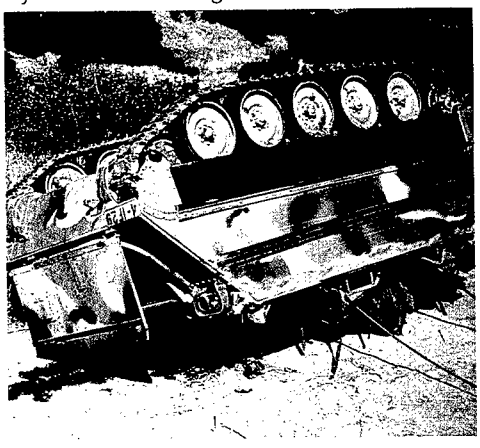
Figure 1. Basic Operational Process

Army accident experience shows that, in the absence of command-defined risk parameters, individual soldiers decide for themselves what level of risk they will accept.

What if . . .?

On the following pages are synopses of Army accidents that actually happened. What if the risk management process had been used before these missions? Would the results have been the same?

• **The unit was participating in a field training exercise at the National Training Center.** At about 0130, an M113A1 armored personnel carrier with **an inoperative communication system** was dispatched on a patrol/scout mission. The mission was to scout for "enemy" positions while traversing the forward area **at night without lights** (total blackout). There was a sense of urgency because of a **last-minute change** in the unit's mission due to communication problems with higher command. The new mission required the scout track to **operate in an area other than the area planned** and to be on the move immediately. **The crew was fatigued** and had been on the move most of the previous 48 hours. They had had only one period of 2 to 3 hours of uninterrupted sleep and other rest periods were short and intermittent. At about 0300, the M113 hit a 5-foot dropoff in the tank trail and rolled onto its top. One crewmember was crushed by unsecured cargo.



Mission analysis. When you are assigned or create a mission, as part of your initial estimate you immediately begin to break it down into its component parts; e.g., movement to the operations site, night convoy, movement to contact, assault on an objective, etc. To build safety into an operation, you must first "see" the operation in these same component parts. Operations also have a time factor—a beginning-to-end series of events in which the timing of events is often as significant as the events themselves when evaluating risk. The objective is to reflect the total life cycle of the operation from the first preparatory actions until the soldiers are back in the barracks or the next phase of operations is under way.

The mission analysis is nothing new. A good commander and tactician analyzes the mission in this manner regardless of safety needs. This same analysis makes it possible to systematically and objectively inject safety into the operational process.

Risk assessment. There are no hard and fast rules for assessing risks. The bottom line is that commanders have some flexibility in planning and execution and can reduce the probability or severity of an accident.

Risks may be assessed by first measuring the various risks, combining their values, then making a value judgment of what safety precautions are appropriate. By adding the values together, the commander can determine if a proposed mission falls within acceptable risk parameters. He then has the option to take action to reduce the risk as time and flexibility permit. As a minimum, he will become aware that he is functioning in a variable risk environment.

What if . . . ?

• **The unit was in the field to support infantry platoon-level ARTEP training** and to train for its own upcoming unit ARTEP. At about **0430 on the fifth day,** the unit was preparing to dispatch five UH-1H helicopters on a troop extraction mission. There was no official weather forecast or observation available; **the ceiling was estimated to be below 100 feet, and visibility was limited to one-half to 1 mile** due to darkness, fog, and clouds. The commander **placed the mission on a weather hold** but decided to reposition the aircraft from their tactically dispersed parking areas to a large cleared area. One of the aircraft, which was parked in a small clearing **surrounded by 50- to 60-foot trees,** was started and began a straight-up hover to an altitude of about 80 feet, where it entered the **fog and clouds.** It accelerated forward and, moments later, crashed in a small valley after flying through the tops of 25- to 30-foot hardwood trees for about 100 meters. The three crewmembers aboard were killed, and the aircraft was a total loss. The pilot-in-command, who had been a **PIC for only 2 weeks, had a total of 482 hours of flight time; his copilot had a total of 245 hours.**

For the most part, risk measurement is a subjective assessment of hazards. What is needed is a quick test to measure the risks involved in a wide spectrum of operational missions. The act of consciously evaluating a mission results in the commander's thinking through the factors that affect mission safety.

Different missions will involve different elements that can affect mission safety. However, seven elements—planning, supervision, soldier endurance, soldier selection, weather, mission complexity, and equipment—are central to safe completion of any operation. Using matrices that assign a numerical value to each of the elements is one way of quickly gaining an appreciation of overall risks. The following matrices offer examples of risk assessments for each of the seven elements common to all missions. Keep in mind, however, that these are arbitrary weighted factors; modify them to accommodate particular missions and units.

Planning. The planning element is measured by comparing guidance to preparation. Specific guidance and indepth preparation are optimal.

Planning

Risk Value

Guidance	Preparation		
	Indepth	Adequate	Minimal
Vague	3	4	5
Implied	2	3	4
Specific	1	2	3

Example: A specific request received in the unit 3 days in advance would be assessed a risk value of 1. A vague request received only hours in advance would be a 5.

The level of the decision maker should correspond to the level of the risk. The greater the risk, the more senior the final decision maker should be.

What if . . . ?

• **The mission involved rappelling and suspension/traverse (slide for life) training** to instill individual confidence. Rappelling by volunteer participants was conducted without incident. The unit then moved to the edge of the pond over which the slide for life training was to be conducted. Again, participation was voluntary. A briefing was provided by the officer-in-charge (OIC). Four water rescue personnel were positioned in the water in the vicinity of the point at which each individual would release himself into the water. However, there was **no life ring** with recovery rope attached, **no recovery boat, no grappling hook, and not enough life vests** to accommodate all participants. Four life vests were available for those volunteers who wished to use them, but they **were not required to be worn.** The pond water was polluted, and **water temperature was 64° F.** in the center at a depth of 3 to 4 feet. The last participant was not wearing a life vest. When he entered the water and resurfaced, he panicked and began thrashing in the water. Several unit members attempted to rescue him, but he fought them off and drowned.

Supervision. The level of supervision is measured by comparing mission type to command control. Support, day tactical, and night tactical are seen as increasingly difficult mission parameters. Support includes routine nontactical missions conducted by the unit in the local area. Command and control range from organic control to the unit being placed under the operational control of external organizations. The attached relationship is viewed as one in which multiple units are involved in a venture that requires extensive lateral coordination.

Supervision

Risk Value

Command Control	Mission		
	Support Nontactical	Day Tactical	Night Tactical
OPCON	3	4	5
Attached	2	3	4
Organic	1	2	3

Example: An OPCON garrison support mission would receive a risk value of 3.

Soldier endurance is measured by comparing the length of rest to the quality of rest. The unit environment is preferable in quality to the training or tactical environment. Local soldier endurance policies would be used to factor length of rest.

Soldier Endurance

Risk Value

Quality of Rest	Length of Rest		
	Optimum	Adequate	Minimal
Tactical	3	4	5
Training	2	3	4
Garrison	1	2	3

A Tough Job Has Gotten Tougher

Twenty years ago the Army mainly needed a basic rifleman trained to walk, run, or crawl on the battlefield. Training for most soldiers was consistent with that requirement. Accidents did happen, of course, to the rifleman, but the basic tasks of the job at that time really didn't require a major effort from a safety point of view. Even the hazards that did exist were relatively obvious—explosives, weapons, heavy equipment.

Today just about every soldier, even the rifleman, is also a system specialist in one regard or another.

Today's equipment has inherent hazards; a lot of it is complex and expensive, and it's relatively easy to damage. Today's training hazards are less apparent and not instantly evident . . . and a single mistake by a single soldier can produce a catastrophic accident.

The Army demands much higher standards of performance from today's soldiers than from the recruits of 20 years ago.

So what can commanders do about the problem? If commanders could instill in their soldiers three minimum but effective characteristics, future accident prevention problems would be a small shadow of what we face today.

- **The first is discipline, the capacity to understand and accept the need for a set of rules and standards of conduct aimed at minimizing accident potential.**
- **The second characteristic is an attitude that accepts and respects responsibility for the safety of oneself, the safety of others, and the protection of property.**
- **The third is a "sixth sense" of safety, a keen awareness that spots accidents about to happen, a consciousness of the potential tragic results of unsafe acts on and off duty, and an appreciation of the value of protective equipment.**

Soldier selection is measured by comparing the task to soldier experience. Experience is factored from OJT through highly qualified. OJT is defined as a recent graduate of a skill-producing school. MOS qualified is defined as a soldier competent to perform all basic soldier tasks for his MOS. Highly qualified is seen as the soldier who exceeds normal MOS requirements.

Soldier Selection

Risk Value

Task	Soldier Experience		
	Highly Qualified	MOS Qualified	OJT
Complex	3	4	5
Routine	2	3	4
Simple	1	2	3

Weather is measured by comparing temperature with moisture/visibility.

Weather

Risk Value

Temperature ^{0}F	Visibility / Moisture		
	Clear/ Dry	Low Ceiling/ Drizzle	Fog/Rain/ Snow/Ice
0-31	3	5	4
32-59	2	4	3
60+	1	3	2

By changing the elements, aviation commanders can apply the risk factor matrices to their operations.

Six things company commanders can do to save lives and equipment

1. **Set high standards.** Set and enforce high operating standards in every activity of your unit. Safety is a by-product of professionalism, of doing the job right the first time every time. By-the-book, disciplined operations are mandatory.
2. **Know your soldiers.** Know their training status and their qualifications. Test new people's knowledge, regardless of whether or not they have been previously operator certified. This applies to weapons, every type of moving equipment, even gas masks—all equipment.
3. **Know your equipment.** Know its capabilities and its condition. Numerous check sheets and publications are available to guide you.
4. **Apply dispatch discipline.** Many accidents involve equipment that should not even be out of the motor pool or off the helipad. Commit the use of equipment only when necessary, only when it can contribute to genuine training in the unit mission. Tough-minded dispatch discipline reduces exposure to accidents.
5. **Manage risks in training.** Integrate the requirement for safety with the demand for realistic combat training. A high degree of safety can be achieved through the systematic management of inherent mission risks. (A practical process for managing these risks is included in this pamphlet.)
6. **Maintain awareness.** Be constantly aware of the mission-critical importance of safety in all your operations. You cannot allow yourself to relax your vigil and become complacent when everything is running smoothly. Continuous awareness of the requirement for integrating safety into all day-to-day unit operations is essential to maintaining peak readiness.

Complexity is measured by comparing operations length in time to condition of operational area. Continuous operations of 48 hours without sleep is seen as the noncombat tactical limit. The operational area is factored by terrain considerations such as obstacles and vegetation.

Complexity

Risk Value

Operation Length	Operational Area		
	Improved	Tactical	Unknown
48 hours	3	4	5
24 hours	2	3	4
8 hours	1	2	3

Equipment is measured by considering maintenance status and age.

Equipment

Risk Value

Equipment Age*	Maintenance Status			
	Highly Maintained C-1	C-2	C-3	Not Combat Ready C-4
Old	3	4	5	5
Average	2	3	4	5
New	1	2	3	5

*Old = Within 75 percent of time-life as defined by appropriate TB 43 series.

Average = Within 26-74 percent of time-life as defined by appropriate TB 43 series.

New = Within 25 percent of time-life as defined by appropriate TB 43 series.

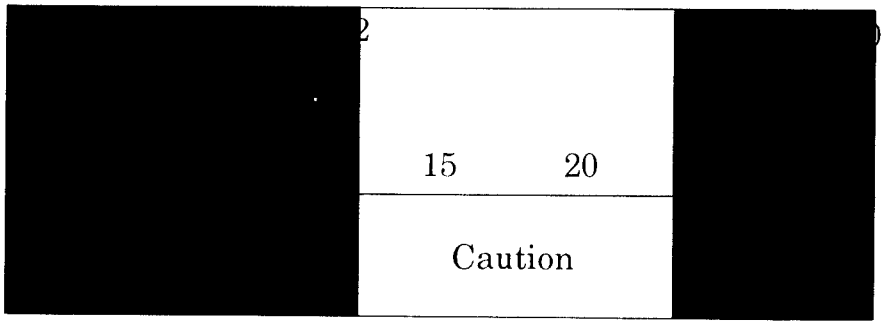
Proven Success Factors

The Army Safety Center visited three battalion/squadron-sized organizations with good safety records to determine what factors contributed to their low accident rates. Five factors were common to all three organizations:

- Performance criteria were precisely defined.
- All personnel were acutely aware of the performance criteria.
- Training was conducted to a high standard.
- Immediate and effective action was taken to deal with any deviation from established performance criteria.
- Operations were conducted by the book, and unit morale was high. In fact, in every safety study we've seen, where units were safe, troop morale was high.

The last factor is extremely important. **Unit members were proud of the fact that their organization conducted operations by the book.**

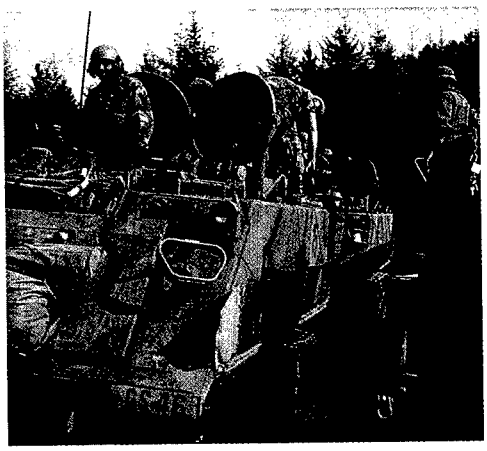
After all risks have been assessed, the values would be totaled and applied to a quick reference gauge.



Operations with a value of 0 to 12 would be judged as **low risk**. A value of 13 to 23 is seen as a **caution** area; complete unit command involvement is warranted. A "caution" rating should be given special consideration if only one or two elements have significantly raised the overall risk level. For example, a long flight through changing time zones immediately before a 48-hour tactical mission would be cause for serious concern even though the operation's overall risk assessment might fall well within the "caution" range. **High risk** operations assigned a value of 24 to 30 require coordination, before executing the mission, with the next higher level of command external to the organization making the assessment.

To demonstrate the assessment technique, let's look at three scenarios involving a mechanized infantry troop mission. Only the assessment elements will be varied.

Any increase in a mission's level of difficulty produces a corresponding increase in the level of risk involved.



Scenario 1. Your mechanized infantry unit will participate in Operation Swift Strike at Fort Stewart, Georgia. You've known about the mission for several weeks and have had specific guidance on tasks to be accomplished and plenty of time to prepare for the mission. The 8-hour tactical operation seems tailor-made for your unit because you have been well trained in the tactics to be employed. You've been in garrison for 2 weeks checking and pulling maintenance on newly issued equipment, your soldiers are well rested, morale is high, and the weather is ideal. You tell yourself this mission should be a snap.

Element	Assessment Elements	Risk Value
Planning	Guidance is quite specific and an extended amount of preparation time is available.	1
Supervision	Mission is categorized as organic day tactical.	2
Soldier endurance	Unit has been in garrison and is fully rested.	1
Soldier selection	Simple undertaking for highly qualified unit that has operated together for an extended period of time.	1
Weather	Clear and dry; temperature is 75° F.	1
Complexity	Play is planned for 8 hours.	2
Equipment	Equipment is new and highly maintained.	1

Risk value = 9 (low risk)

Scenario 2. Your mechanized infantry unit will participate in Operation Hunter/Killer at Baumholder, Germany. This is an annual exercise, and you have received specific guidance on your mission taskings. The taskings have been recently performed well in another exercise, and your unit is well prepared. The majority of your equipment is new and field-proven with your troops. There are no significant maintenance problems. Summertime drizzle is expected with temperatures of about 65° F. The only areas of concern are that your unit has not participated in this exercise before and does not know the terrain, the operation requires an intensive 48 hours of continuous effort, and you will be required to start your mission as soon as you arrive.

Element	Assessment Elements	Risk Value
Planning	Guidance is specific and preparation time has been extensive.	1
Supervision	Mission is categorized as organic night tactical.	3
Soldier endurance	Unit will make a trans-Atlantic flight just prior to mission tasking.	5
Soldier selection	Well prepared and practiced taskings for a cohesive unit.	1
Weather	Some drizzle; temperature 65° F.	2
Complexity	Tasking will run intensively for 48 hours.	5
Equipment	Equipment is new and highly maintained.	1

Risk value = 18 (caution)

The key factor in detecting significant risk is to maintain a strong organizational mission perspective.

Scenario 3. Your mechanized infantry unit will participate in Operation Quick Kill at Fort Benning, Georgia. You received your mission alert on short notice due to an administrative oversight and there is some confusion as to the tasking. It appears you will be OPCON to a nonmechanized unit that has never worked with a mechanized unit before. To make matters worse, you've just received several new members to your unit who have only recently been OJT-qualified, your unit has just returned from a demanding FTX, the temperature is forecast to be near freezing with fog, and the daylight attack operation has been extended from 8 to 24 hours. Your only positive thought is that at least you have new equipment with a combat readiness of C-1.

Element	Assessment Elements	Risk Value
Planning	Due to an administrative oversight, request for mission arrives late at unit. Confusion exists as to exact tasking.	5
Supervision	Mission is categorized as OPCON day tactical.	4
Soldier selection	Platoon has just received several new members from basic training. One squad leader has just been assigned. Risk value is judged routine OJT.	4
Soldier endurance	Unit has just returned from a demanding field training exercise.	5
Weather	Front is passing through operational area. Temperature will dip to near freezing with fog forecast.	4
Complexity	Operation has been extended to 24 hours.	4
Equipment	New equipment with combat readiness of C-1.	1

Risk value = 27 (high risk)

Practical Exercise

To get an idea of how simple it is to apply the process described here, take a moment to perform risk assessments of the following scenarios.

Cold Weather Mechanized FTX. Your mechanized infantry battalion has been tasked to participate in Operation Brimfrost, staging out of Fort Wainwright, Alaska. Six months ago, your infantry battalion converted to a new mechanized TOE. The plan calls for the battalion to convoy from Anchorage to Wainwright immediately after arrival in Alaska on 20 January and fall in on pre-positioned equipment. Although you have known of the requirement for more than a year, it seems that, as the deployment date approaches, the tactical play you were briefed on is starting to change rapidly. The battalion is highly motivated and looking forward to the 10-day operation. Scheduled flight time via C-141 is 8 hours.

Field Artillery Night Move. Your field artillery battalion has been tactical for 8 days undergoing an ARTEP evaluation. The planned night move scheduled for tomorrow has just been rescheduled for tonight due to forecast severe weather. In fact, you have just received a 2-hour warning order. Radio communications throughout the battalion have been poor due to atmospheric conditions. Weather is deteriorating rapidly. Two of the batteries have new commanders. The battalion in the last 4 months has received 40 new people, MOS trained at Fort Sill. This is your first experience with Camp Swampy.

The point is, without a risk assessment, scenario 3's high-risk mission might have been conducted without a full appreciation of the risks involved. It's also important to note that a "caution" rating signals the need for serious consideration. For example, in scenario 2, the soldier endurance value of 5 combined with the complexity value of 5 could outweigh the minimal risk values of all the other elements.

It is important to note at this point that the risk elements are arbitrary in nature, and individual units are expected to modify and adjust elements to meet local needs. For example, units operating in arctic climates would have to adjust the weather matrix; ranger units would modify the soldier endurance and mission complexity matrices to meet more demanding requirements.

What about specific hazards? The risk matrix gives you an overview of the inherent risks of the operation. In addition to this general perspective, you need to detect specific hazardous situations; e.g., dangerous artillery support plans, specific hazards of a river crossing, etc. The hazard assessment provides this detail.

Hazard assessment is the initial examination of an operation's hazards and their implications. It is normally based on the mission analysis and takes place before the details of an operation have been completely defined. Hazard assessment has one objective. It defines, at the earliest possible point in the operational life cycle, what hazards can be expected in each of the major operational phases. Doing this early permits dealing with these hazards when they are still preliminary; i.e., when the operation is still being planned. This assures that hazard controls can be developed as the operation evolves rather than tacking them on later, often as an afterthought.

Generally, a hazard assessment simply consists of taking 10 to 15 minutes, perhaps with a couple of platoon leaders, to list the specific hazards associated with each operational phase. If time permits, it may be useful to

When operating in the high-risk zone, everyone involved must be aware of the risk implications.

Airborne Operation FTX. You have been tasked to take your airborne battalion consisting of 1,780 personnel from Fort Bragg, NC, to Fort Irwin, CA, to conduct a mass tactical parachute assault using five drop zones (DZs). C-141s have been laid on to support the operation. Flight time to DZ has been calculated at 5+30. Two hours have been allocated for pre-mission staging. Coordination for this joint service operation has not gone smoothly; intraservice rivalry has been intense. The battalion is highly trained and motivated, but has recently received several new items of equipment such as the Dragon Missile Jump Pack that the troops are not totally familiar with. The tactical play calls for the drop to be made at 800 feet, 2 minutes after an artillery preparation. Timing is critical. The DZs are flat, large areas containing low-lying shrubbery and rocks. Weather at the DZ is forecast to be clear. Winds the past several days have been high with gusts approaching 35 knots. As you load, you are told the jump will be covered by national television.

Answers

While there are no right or wrong answers, in training classes a pretty consistent 85 percent of students answer within ±2 of the following values.

Cold weather mechanized FTX: 18.
Field artillery night move: 20.
Airborne operation FTX: 24.

ask the post or division safety office for summaries of accidents that have occurred in similar operations.

What are your risk-reduction options? The use of risk matrices and hazard analyses will define the kinds and significance of hazards faced in an operation. Now the task is to reduce the risk **without** significant adverse impact on operational objectives.

The countermeasure option checklist below has direct application to the development of risk-reduction options. You can use it to develop a full array of possibilities and then weed out those that are clearly impractical. The product of the risk-reduction phase should be a list of options that are practical, although not necessarily desirable, for the particular operation.

Countermeasure options:

Eliminate the hazard. Eliminate the hazard totally, if possible, or substitute a less hazardous alternative.

Control the hazard. Reduce the magnitude of the hazard or provide containment or barriers.

Change operational procedures. Modify operational procedures to minimize risk exposure consistent with mission needs.

Educate. Train personnel in hazard recognition, avoidance, and defeating.

Motivate. Motivate personnel to use effective hazard-avoidance actions.

A key factor in detecting significant risk is to maintain a strong organizational mission perspective. Adapt these basic assessment elements to fit your organizational needs. You can also develop additional matrix charts that blend in special considerations. One caution—keep the process simple. The idea is to develop a quick measure for risk and then determine an array of options for eliminating or controlling that risk.

The risk management approach gives commanders as much capability as possible with the least amount of potential risk.

The Risk Management Process

1. **Risk identification**
   This is risky, this isn't.
2. **Risk evaluation and quantification**
   The risk is this great.
3. **Risk reduction**
   Risk can be reduced by this and this.
4. **Risk decision making**
   This risk we can live with, this we can't.
5. **Risk decision followup**
   Is the risk and benefit as projected?
6. **Risk research**
   What is the risk? What risk is essential?

Advantages of Risk Management for Command

- Detect risks before losses.
- Quantify risk.
- Provide risk reduction alternatives.
- Better management decisions.
- Greater integration of safety.
- Increased mission capability.

Completing integration of safety into the operational process. At this point, you, for the investment of as little as 30 to 60 minutes of your time, should have a thorough insight into the risks you will face in the operation and the risk reduction options available to you. All this is achieved **before** final operational decisions are made or a single oporder is issued. From this point, the safety process becomes a totally integrated aspect of the operational process. There must be no distinction **whatsoever.** The operational process continues with the final selection of specific tactical procedures and the issuing or briefing of orders. These final tactical procedures are influenced by, but not dominated by, risk considerations. Ultimately, you must balance training needs against potential risk costs.

Risk reduction measures are an important factor in the details of tactical procedures and will be a meaningful part of written and verbal orders. Similarly, safety checks, special training and briefings, revisions to SOP, etc., are all accomplished as an integrated part of the operational process.

In summary, the effective commander defines his objectives and standards of performance for each operation he conducts. These objectives and standards include risk management factors as the full equal of the tactical, logistical, and leadership components.

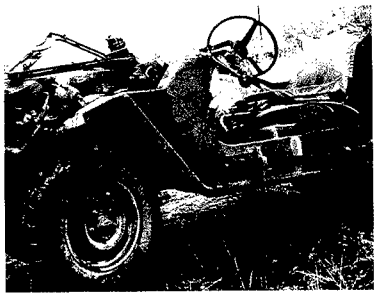
What's the payoff? The risk management approach gives commanders a tool to improve efficiency, effectiveness, and safety in all operations. The payoff is in increased readiness as a result of safer, smarter, more beneficial training.

Risk management permits the execution of realistic training scenarios not possible without risk management procedures due to their high potential cost in accidents. It also minimizes personnel and materiel losses in day-to-day training activities. Finally, leaders who routinely use risk management techniques to make risk decisions in training are prepared to make better risk decisions in wartime, resulting in better tactical decisions and thus greater mission potential.

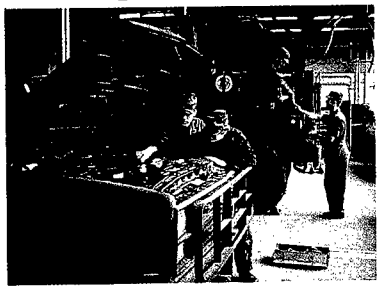
Target Your Actions for Biggest Payoff

Four accident categories kill and injure more soldiers than all other types of accidents combined. Improving safety in these key areas will give you the biggest payoff for your safety effort.

The following tables list the most frequent causes of accidents and command actions to take to improve safety in each category.

ACCIDENT CATEGORY	MOST FREQUENT CAUSES	ACTIONS TO TAKE
Private motor vehicles 	Drinking and driving	• Make troops aware of the career and legal consequences of the Army's tough policy on drinking and driving. • Deal firmly with each DUI offender. • Develop a year-round POV accident prevention program targeted at drinking and driving. • Make pre-holiday safety briefings mandatory and stress the life-threatening dangers of drinking and driving.
	Failure to use safety belts and helmets	• Enforce the requirement to use safety belts in vehicles and helmets while riding motorcycles on and off post, on and off duty. • Develop special POV campaigns that encourage the use of safety belts and motorcycle helmets by soldiers and family members. • Stress to soldiers the lifesaving benefits of wearing safety belts and motorcycle helmets.
	Driver fatigue	• Encourage soldiers to avoid long trips during 3-day holiday weekends.
Army motor vehicles 	Undisciplined, untrained drivers	• Take corrective action at the first sign of a breakdown in driver discipline or disregard for established operating procedures. • Provide hands-on training in the environment in which drivers will operate their vehicles. • Plan training into the mission, not as a separate activity.

ACCIDENT CATEGORY	MOST FREQUENT CAUSES	ACTIONS TO TAKE
Army motor vehicles 	Undisciplined, untrained drivers	• Whenever unit operations permit, pair an experienced driver with an inexperienced one to provide supervision and hands-on training. • Develop a program to ensure training includes seasonal and local driving hazards. • Hold drivers accountable for safe performance.
	Speeding	• Establish and enforce safe speed limits for various road and weather conditions.
	Failure to follow operating procedures	• Require strict adherence to operating procedures. • Ensure all appropriate vehicle technical manuals are used.
	Lack of supervision and control	• Ensure first-line supervisors strictly require and supervise drivers' preoperation checks. • Restrict AMV dispatches when road or weather conditions are hazardous.
	Poor maintenance	• Require strict adherence to maintenance procedures. • Use mobile maintenance teams during FTXs so damaged or improperly operating vehicles do not have to be driven. • Require special attention to brake components by maintenance personnel during periodic maintenance and by drivers during preoperation checks. • Prohibit operation of vehicles with defective brakes.
	Unsafe convoy operations	• Establish and enforce safe speed limits and following distances. • Convoy speed depends on road and traffic conditions. Generally, speed should not exceed 15 to 20 mph on long moves over rough roads; maximum catchup speed should not exceed 25 to 30 mph.

ACCIDENT CATEGORY	MOST FREQUENT CAUSES	ACTIONS TO TAKE
Personnel injury 	Command failure to take precautions for the operating environment	• Make the identification, elimination, and control of risks an integral part of tactical planning and of field training exercises.
	Leader's lack of knowledge of personnel	• Know your people: their qualifications, their training status, their physical condition, and their abilities.
Combat soldiering activities	Failure to follow correct procedures for handling and operating weapons and using pyrotechnics and simulators	• Improve NCO supervision of soldier activities. • Ensure NCOs make on-the-spot corrections of unsafe acts and violations of procedures. • Ensure safety briefings include pyrotechnics and simulators.
	Soldier belief that safety requirements are suspended during training exercises to achieve tactical realism	• Eliminate this dangerous misconception through pre-exercise briefings that spell out the requirement for strict adherence to all safety procedures during **all** unit operations.
Maintenance, service, and repair activities 	Failure to follow correct procedures	• Demand compliance with established work procedures even on routine tasks.
	Failure to use protective equipment	• Make sure protective equipment is worn on the job and include this requirement in SOPs.
	Misuse of tools and equipment	• Require the use of the right tool for every job. • Require personnel to keep work areas clean and tools in place.
	Inadequate inspections	• Ensure supervisors at all levels regularly conduct unscheduled spot-checks to be sure personnel are using correct, safe procedures. • Ensure preventive maintenance inspections are completed properly.
	Lack of supervision and insufficient command emphasis on safety	• Improve direct supervision of maintenance activities. • Ensure SOPs adequately describe procedures to be followed and cover safety aspects of all activities. • Hold personnel accountable for safe conduct on the job.

ACCIDENT CATEGORY	MOST FREQUENT CAUSES	ACTIONS TO TAKE
Army combat vehicles 	Failure to follow correct procedures	• Enforce the use of correct procedures by crews and maintenance personnel. • Promptly correct unsafe acts and disregard of established procedures. • Prohibit nose-to-nose slave starting. • Require crews and passengers to wear protective headgear at all times.
	Driving too fast for conditions	• Establish and enforce safe speed limits for various road and weather conditions.
	Following too closely	• Before each convoy, brief drivers on safe-to-follow distances.
	Fatigue	• Anticipate errors caused by fatigue. Step up supervision during extended training periods to assure troops do not shortcut procedures and safety precautions due to fatigue. • Establish and enforce a unit crew rest policy.
	Inadequate driver training	• Allow only properly trained and licensed drivers to operate tracked vehicles. • Match the driver to the mission. • During training, expose drivers to all the conditions under which they will be expected to operate.
	Improper use of ground guides	• Strictly enforce the requirement to use ground guides and ensure they follow correct procedures.
	Hatch covers	• Make sure the safety latch modification has been installed on all your tracked vehicles. Then require crews to insert the safety pin every time the vehicle is driven with the hatch cover open.
	Lack of supervision	• Improve direct supervision of maintenance. • Ensure preventive maintenance checks and inspections are made.